

# SYSTEM AND METHOD FOR DYNAMICALLY GENERATING WEB DOCUMENT CONTENT USING A RULES-BASED ENGINE AND IMPLICIT TEMPLATE HIERARCHY

## Abstract

- 5           A system and method for dynamically generating Web content using a  
parse tree is described. A template describing a dynamically generated Web page  
is built. The template includes a script written in a tag-delimited page description  
language. One or more markers included within the template each indicate a  
relative location within the Web page for dynamic content insertion. The  
10   hierarchical nature of the page description language is used to infer a set of  
display regions, which are referenced by a parse tree. The parse tree includes a  
plurality of nodes structured into levels. Each node corresponds to structural tags  
specified within the script. Each successive level represents a further nesting of  
the structural tags within the script. A controller program invokes a document  
15   engine and specifies a particular template. Each marker may be substituted with  
dynamic content zero, one or several times each. The document engine accepts  
substitution requests from the controlling program and implements specific  
inclusion rules that ensure well-formed output documents. The dynamic content  
is inserted into the display region for the substituted marker. Each node located in  
20   a level of the parse tree previous to the node corresponding to the substituted  
marker is processed. The output structure is scanned and the document is  
rendered with the dynamic content included therein.